

WHAT IS CLAIMED IS:

1. A material to form a layer on a surface, said material comprising:

a composition including a silicone resin component, having silicon atoms associated therewith, a cross-linking component, a catalyst component, and a solvent component, with relative proportions of said silicone resin component, said cross-linking component, said catalyst component and said solvent component being established to reflow and vary a percentage of silicon atoms in said composition upon said composition and reflow when changing between a liquid to a solid phase to obtain a predetermined percentage of silicon atoms by weight.

2. The composition as recited in claim 1 wherein said silicone resin component is approximately 4% by weight of said composition, said cross-linking component is approximately 0.95% by weight of said composition, said catalyst component is approximately 0.05% by weight of said composition, and said solvent component is approximately 95% by weight of said composition.

3. The composition as recited in claim 1 wherein a percentage of said silicon atoms being in a range of 10% - 20% by weight after transitioning said composition from a liquid state to a solidified state.

4. The composition as recited in claim 1 wherein a percentage of said silicon atoms being greater than 20% by weight after transitioning said composition from a liquid state to a solidified state.

5. The composition as recited in claim 1 further including an epoxy-functional silane component, wherein said silicone resin component is approximately 4% by weight of said composition, said cross-linking component is approximately 0.7% by weight of said composition, said epoxy-functional silane component is approximately 0.25% by weight of said composition, said catalyst component is approximately 0.05% by weight of said composition, and said solvent component is approximately 95% by weight of said composition.

6. The composition as recited in claim 1 wherein said silicone resin component is selected from a set of hydroxyl-functional polysiloxanes consisting of methyl, phenyl, and propyl groups.

7. The composition as recited in claim 1 wherein said cross-linking component includes an aminoplast crosslinker.

8. The composition as recited in claim 1 wherein said cross-linking component includes hexamethoxymethylmelamine.

9. The composition as recited in claim 1 wherein said catalyst component includes an acidic compound.

10. The composition as recited in claim 1 said catalyst component includes toluenesulfonic acid.

11. The composition as recited in claim 1 wherein said solvent component is from a set consisting of

alcohol, ether, glycol, glycol ether, methyl amyl ketone, ester, and acetate.

12. The composition as recited in claim 5 wherein said epoxy-functional silane component is selected from a set consisting of glycidoxypropyltrihydroxysilane, 3-glycidoxypropyldimethylhydroxysilane, 3-glycidoxypropyltrimethoxysilane, 2,3-epoxypropyltrimethoxysilane, and gamma-glycidoxypropyltrimethoxysilane.

13. The composition as recited in claim 1 wherein said composition changes from said liquid state to said solidified state as a result of thermal exposure.

14. The composition as recited in claim 1 wherein said composition changes from said liquid state to said solidified state as a result of centrifugation and thermal exposure.

15. A composition for forming a layer on a surface, said composition consisting of:

hydroxyl-functional polysiloxane;  
hexamthoxymethylmelamine;  
toluenesulfonic acid; and  
methyl amyl ketone.

16. The composition as recited in claim 15 wherein said hydroxyl-functional polysiloxane is approximately 4% of said composition, said hexamthoxymethylmelamine is approximately 0.95% of said composition, said toluenesulfonic acid is approximately 0.05% of said

composition, and said methyl amyl ketone is approximately 95% of said composition.

17. The composition as recited in claim 15 further including gamma-glycidoxypropyltrimethoxysilane.

18. The composition as recited in claim 17 wherein said hydroxyl-functional polysiloxane is approximately 4% of said composition, said hexamthoxymethylmelamine is approximately 0.7% of said composition, said gamma-glycidoxypropyltrimethoxysilane is approximately 0.25% of said composition, said toluenesulfonic acid is approximately 0.05% of said composition, and said methyl amyl ketone is approximately 95% of said composition.

19. The composition as recited in claim 15 wherein relative proportions of said hydroxyl-functional polysiloxane, hexamthoxymethylmelamine, gamma-glycidoxypropyltrimethoxysilane, said toluenesulfonic acid, and methyl amyl ketone provides said composition with approximately 20% by weight of silicon atoms upon transitioning from a liquid state to a solidified state.

20. A material to form a layer on a surface, said material comprising:

a composition including a silicone resin component, having silicon atoms associated therewith, a cross-linking component, a catalyst component, and a solvent component, with relative proportions of said silicone resin component, said cross-linking component, said catalyst component and said solvent component being established to vary a percentage of silicon atoms in said composition upon said composition changing between a liquid to a solid phase to obtain a predetermined

percentage by weight and provide a said composition with a glass transition temperature that is below a curing temperature.

21. The composition as recited in claim 20 wherein said silicone resin component is approximately 4% of said composition, said cross-linking component is approximately 0.7% of said composition, said epoxy-functional silane component is approximately 0.25% of said composition, said catalyst component is approximately 0.05% of said composition, and said solvent component is approximately 95% of said composition.

22. The composition as recited in claim 20 with said predetermined percentage is in a range of 10% - 20% by weight.

23. The composition as recited in claim 20 with said predetermined percentage being greater than 20% by weight.

24. The composition as recited in claim 21 wherein said silicone resin component is selected from a set of hydroxyl-functional polysiloxane consisting of methyl, phenyl, and propyl.

25. The composition as recited in claim 21 wherein said cross-linking component includes hexamethoxymethylmelamine.

26. The composition as recited in claim 21 wherein said catalyst component includes toluenesulfonic acid.

27. The composition as recited in claim 21 further including an epoxy-functional silane component selected from a set consisting of glycidoxypropyltrihydroxysilane, 3-glycidoxypropyldimethylhydroxysilane, 3-glycidoxypropyltrimethoxysilane, 2,3-epoxypropyltrimethoxysilane, and gamma-glycidoxypropyltrimethoxysilane.

28. The composition as recited in claim 21 wherein said solvent component is from a set consisting of alcohol, ether, glycol, glycol ether, methyl amyl ketone, ester, and acetate.